



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

[Handwritten signature]

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/072,490	02/05/2002	Ning Lei	D5253	1192

30409 7590 03/01/2004

INTERNATIONAL ENGINE INTELLECTUAL PROPERTY COMPANY
4201 WINFIELD ROAD
P.O. BOX 1488
WARRENVILLE, IL 60555

EXAMINER

HWU, DAVIS D

ART UNIT	PAPER NUMBER
----------	--------------

3752

DATE MAILED: 03/01/2004

[Handwritten mark]

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/072,490

Applicant(s)

LEI, NING

Examiner

Davis Hwu

Art Unit

3752

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 February 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-60 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 10-19, 21-28, 30-34, 36, 40-47, 50, 52, 53, 58 and 59 is/are rejected.
- 7) ☒ Claim(s) 9, 20, 29, 35, 37-39, 48, 49, 51, 54-57 and 60 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

R sponse to Amendm nt

1. Applicant's amendment of February 6, 2004 is acknowledged and entered as paper number 5.
2. Applicant's remarks have been considered but are moot in view of the new ground(s) of rejection.
3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 102

4. Claims 1, 5-8, 10, 11-19, 41-47, 50, 52, 53, 58, and 59 are rejected under 35 U.S.C. 102(b) as being anticipated by Touchette et al.

The patent to Touchette et al. shows a unit fuel injector, the injector internally preparing fuel during an injection event at a pressure sufficient for injection into an internal combustion engine by means of an intensifier piston 50, comprising a selectively actuatable controller being in fluid communication with a source of pressurized actuating fluid and being in fluid communication with a substantially ambient actuating fluid reservoir, the controller having a first valve 13 for selectively independently porting actuating fluid to and venting actuating fluid from the intensifier piston (Column 11, lines 45-46) and a second valve 11 for selectively independently porting actuating fluid to and venting actuating fluid from a needle valve 16 (Column 12, lines 38-40) during the injection event for controlling opening and closing of the needle valve. Touchette et al. also shows a needle back piston 21.

Claim R j ctions - 35 USC § 103

Art Unit: 3752

5. Claims 2-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Touchette et al. in view of Chen et al. '858.

Chen et al. '858 teaches a fuel injector comprising two valves being disposed in coaxial arrangement. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the device of Touchette et al. by disposing the two valves in a coaxial arrangement as taught by Chen et al. '858, since Chen et al. '858 teaches that such arrangements are known in the art and the device of Touchette et al. would still function properly with such arrangements. Touchette et al. also shows the two valves being independently electrically operated and each of the two valves being independently solenoid operated in a first direction and spring operated in an opposed second direction as recited in claims 3 and 4.

6. Claims 21-28, 30-34, 36, and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Touchette et al.

The device of Touchette et al. is capable of carrying out the method since the device of Touchette et al. comprises all of the structural limitations as recited.

Allowable Subject Matter

7. Claims 9, 20, 29, 35, 37-39, 48, 49, 51, 54-57, and 60 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Art Unit: 3752

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Davis Hwu whose telephone number is 703-305-1663.

The examiner can normally be reached on M-F 7:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Y. Mar can be reached on (703)308-2087. The fax phone number for the organization where this application or proceeding is assigned is (703)872-9302.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0861.

A handwritten signature in black ink, appearing to be 'h' followed by a long horizontal stroke.

Davis Hwu